CANADA - BRITISH COLUMBIA

AGREEMENT RESPECTING

Floodplain Mapping

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STEERING COMMITTEE

CANADA - BRITISH COLUMBIA AGREEMENT

RESPECTING FLOODPLAIN MAPPING

Canada

D.W. Farley
C.H. Pharo

British Columbia

E.W.D. Bonham
G.T. Sawayama

Dear Mr. Minister:

The Steering Committee responsible for the administration of the Agreement Respecting Floodplain Mapping in the Province of British Columbia herewith submits its 1st Annual Report for the year ending March 31, 1989 in accordance with the requirements of the Agreement signed December 3, 1987.

Respectfully submitted,

E.W.D. Bonham, Chairman
Steering Committee

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1.0 INTRODUCTION

The 10-year Canada-British Columbia Agreement Respecting Floodplain Mapping was signed on December 3, 1987 to provide information on the extent of floodplain areas within British Columbia. The Agreement provides for the determination of the location and extent of selected floodplain areas, for the designation or interim designation of the mapped floodplains by the Ministers, and for the preparation and distribution of information about the floodplains to zoning authorities, government agencies, and to the general public.

This report summarizes the progress made during the first year of the Agreement. Up to March 31, 1989, expenditures under the Program amounted to $1,027,211.91. A total of 44 areas were designated or interim designated by the Ministers under the terms of the Agreement. A significant portion of the technical work under the Agreement was assigned to the private sector under contract.

2.0 ORGANIZATION

Under the terms of the Agreement, a four-member Steering Committee was established to be responsible for its general administration and to provide overall co-ordination and direction of the floodplain mapping program. A Technical Co-ordinator and Secretary to the Steering Committee was also appointed. The Steering Committee reports through its Chairman to the Minister of Environment for British Columbia and to the Minister of the Environment for Canada.

A majority of the base mapping production is assigned to the private sector under contract to the Surveys and Resource Mapping Branch, British Columbia Ministry of Crown Lands. Engineering study contracts are managed by the Water Management Branch, British Columbia Ministry of Environment. The Steering Committee assigned co-ordination between the Parties of the public information program under the Agreement to selected staff members.

Figure 1 is an illustration of the organization under the Agreement.

3.0 STEERING COMMITTEE MEMBERSHIP

The Steering Committee consists of two federal and two provincial members. The Steering Committee, which met four times up to March 31, 1989, consists of the following:

CANADA

Mr. E.M. Clark, Regional Director,
Inland Waters
Pacific and Yukon Region
Environment Canada
Vancouver, B.C.
(to February 1, 1989)

Dr. C.H. Pharo, Chief,
Water Planning and Management Branch
Inland Waters
Pacific and Yukon Region
Environment Canada
Vancouver, B.C.
(from February 1, 1989)

Mr. D.W. Farley, Chief,
Water Management Systems Division
Water Planning and Management Branch
Inland Water Directorate
Environment Canada
Ottawa, Ont.

BRITISH COLUMBIA

Mr. J.D.C. Fuller (Chairman)
Assistant Director, Engineering
Water Management Branch
Ministry of Environment
Victoria, B.C.
(to August 25, 1988)

Mr. E.W.D. Bonham (Chairman)
Assistant Director, Engineering
Water Management Branch
Ministry of Environment
Victoria, B.C.
(from August 25, 1988)

Mr. G.T. Sawayama, Director,
Surveys and Resource Mapping Branch
Ministry of Crown Lands
Victoria, B.C.

Mr. R.W. Nichols, P. Eng., Water Management Branch, Ministry of Environment was appointed by the Ministers as Secretary and Technical Co-ordinator to the Steering Committee.

4.1 HIGHLIGHTS

A total of 35 projects previously completed under the provincial floodplain mapping program were designated by the Ministers upon signing of the Agreement on December 3, 1987.

An additional nine projects previously completed under the provincial floodplain mapping program were reviewed and designated, or interim designated, by the Ministers effective September 30, 1988.

Engineering studies were completed or underway in seven project areas.

River surveys were completed for five project areas.

Base mapping activities involved ten project areas.

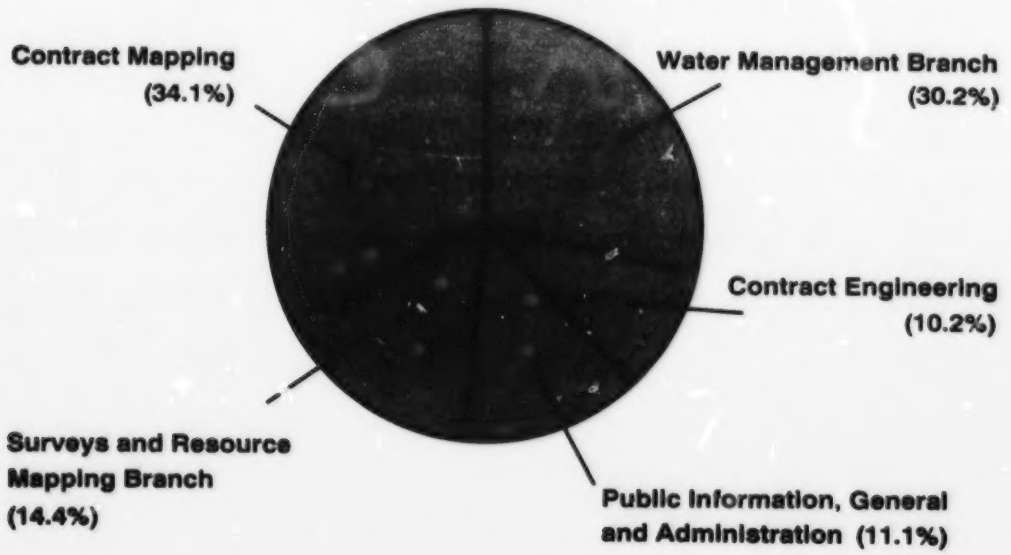
A generic publicity brochure entitled "Canada-British Columbia Floodplain Mapping Program" was produced and distributed.

4.2 EXPENDITURES

Total expenditures for the 1988/89 fiscal year amounted to $1,027,211.91. Appendix 1 shows the 1988/89 expenditures by projects. The Federal share of this expenditure was limited to $500,000 in accordance with the Agreement. Documentation and records of the expenditures have been examined by auditors in accordance with the requirements of the Agreement.

A total of ten base mapping contracts were undertaken by private sector firms. Engineering study contracts were undertaken by consultants for a total of three projects.

The 1988/89 expenditures under the program were distributed as follows:


Contract Mapping (34.1%)
Water Management Branch (30.2%)
Contract Engineering (10.2%)
Surveys and Resource Mapping Branch (14.4%)
Public Information, General and Administration (11.1%)

4.3 PUBLIC INFORMATION

Public information, which has been ongoing since 1974 with respect to the provincial floodplain mapping program, has been expanded under the Agreement.

A press release was issued in April, 1988 concerning the signing of the Agreement. Letters were sent to affected federal and provincial agencies to inform them of the Agreement and their respective obligations under its terms.

Letters of information on the Agreement were sent to 172 municipalities in April of 1988. In October 1988, federal and provincial ministries, agencies, and municipalities affected by the September 1988 designation or interim designations were so advised.

A generic brochure was produced which outlines the major features of the Canada-British Columbia Floodplain Mapping Program, and lists information sources for further details on the program. The brochure was distributed to federal and provincial agencies and is available to the general public.

4.4 ENGINEERING STUDIES

Three projects were completed in 1988/89 and recommended to the Ministers for designation or interim designation by the Steering Committee as follows:

PROJECT		NO. OF DRAWINGS
A.3.1	Bella Coola	10
A.3.3	Nicola	15
A.3.6	Elk	7

Three other projects undertaken in 1988/89 were also completed. The design brief and drawings for these projects were under final review by March 30, 1989. The projects are listed as follows:

PROJECT		NO. OF DRAWINGS
A.3.2	Beaver	6
A.3.5	Slocan	11
A.3.10	Campbell, Quinsam	2

An additional project involving floodplain re-mapping of the Lillooet River was approximately 90 percent complete by the end of the fiscal year.

4.5 RIVER SURVEYS

River survey data was obtained by the Ministry of Environment staff for five projects undertaken in 1988/89 listed as follows:

PROJECT	
A.3.11	Quatse
A.3.29	Lakelse
A.3.39	Salmo
A.3.50	Whistler
A.3.51	Tsolum

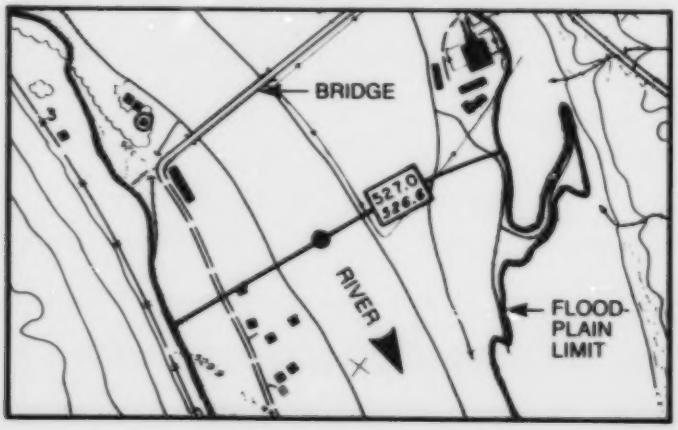
4.6 BASE MAPPING

Activities with respect to base mapping produced during 1988/89 involved ten projects as follows:

PROJECT		ACTIVITY
A.2.3	Kettle	Photo and Survey Control
A.2.6	Similkameen	Survey Control
A.2.9	Alouette	Mapping
A.3.17	Duhamel	Mapping
A.3.19	Silverton	Mapping
A.3.21	Zeballos	Mapping
A.3.39	Salmo	Survey Control
A.3.40	Tahsis	Mapping
A.3.47	Serpentine-Nicomekl	Photo and Survey Control
A.3.51	Tsolum	Mapping

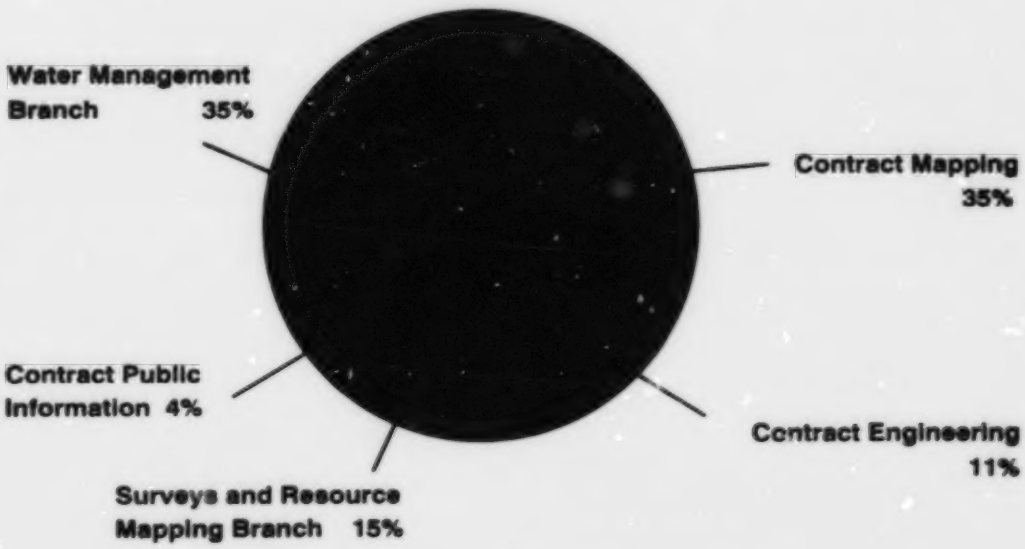
5.0 DESIGNATIONS

Appendix 2 is a listing of the 44 floodplain areas designated by the Ministers during the 1988/89 fiscal year. The 35 floodplain areas designated in December, 1987 listed on Schedule A.1 of the Agreement were produced before signature of the Agreement under the provincial program. The 16 areas listed on Schedule A.2 of the Agreement were reviewed by the Steering Committee. Nine of these areas were designated (or interim designated) as indicated in Appendix 2. The remaining seven areas are to be remapped as noted in Appendix 3.



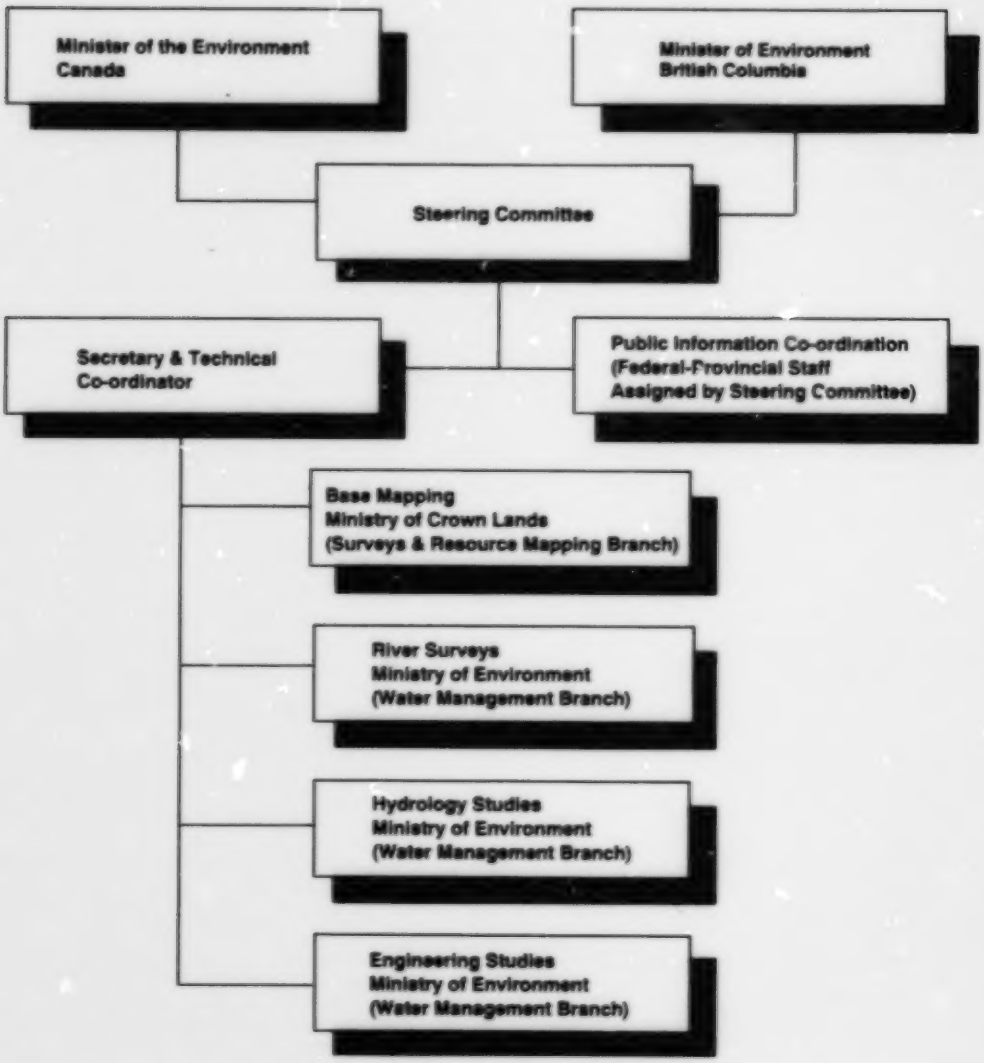
6.0 1989/90 PROGRAM APPROVAL

The Steering Committee approved a program of work and budget for the 1989/90 fiscal year as summarized below: **Total $1 million**


Water Management Branch 35%
Contract Mapping 35%
Contract Public Information 4%
Contract Engineering 11%
Surveys and Resource Mapping Branch 15%

The Ministers were requested to approve additions to Schedule A.3 to permit a rational assessment of the future mapping sequence based on all known potential floodplain mapping areas in British Columbia. The recommended additional areas now form part of Schedule A.3. Appendix 4 lists the areas identified in Schedule A.3 of the Agreement along with the activities completed and proposed for the 1989/90 Program.

FIGURE 1
ORGANIZATION
CANADA - BRITISH COLUMBIA
FLOODPLAIN MAPPING AGREEMENT



APPENDIX 1

EXPENDITURE SUMMARY 1988/89

PROJECT		TOTAL EXPENDITURE ($)
A.1.1	Chilliwack	1,819.51
A.1.18	South Thompson	177.55
A.2.3	Kettle	43,504.19
A.2.6	Similkameen	146,266.60
A.2.9	Alouette	52,034.18
A.2.16	Lillooet	27,134.02
A.3.1	Bella Coola	9,476.10
A.3.2	Beaver	44,559.09
A.3.3	Nicola	16,103.58
A.3.5	Slocan	57,385.52
A.3.6	Elk	2,840.45
A.3.10	Campbell/Quinsam	19,094.82
A.3.11	Keogh/Quatse	36,730.80
A.3.12	Cowichan	3,129.37
A.3.17	Duhamel	5,050.10
A.3.19	Silverton	11,687.00
A.3.21/40	Zeballos/Tahsis	43,264.00
A.3.29	Lakelse	27,711.24
A.3.39	Salmo	86,289.40
A.3.46	Bear	851.82
A.3.47	Serpentine-Nicomekl	33,961.50
A.3.48	Williams	5,261.76
A.3.49	Seymour	2,312.93
A.3.50	Whistler	31,454.58
A.3.51	Tsolum	204,527.33
Total Project		**912,627.44**
General & Administration		**114,584.47**
Total Expenditures		**$1,027,211.91**

APPENDIX 2
DESIGNATED FLOODPLAIN AREAS
IN THE PROVINCE OF BRITISH COLUMBIA

DESIGNATED AREA (December 3, 1987) (From Schedule A.1 of the Agreement)	ISSUE DATE
A.1.1 Chilliwack: Vedder River to Slesse Creek	81-02
A.1.2 Columbia River: Columbia-Windermere Lakes	80-10
A.1.3 Columbia River at Golden	79-02
A.1.4 Columbia River: Windermere Lake-Radium	82-04
A.1.5 Coquitlam River: Coquitlam Lake-Fraser River	76-10
A.1.6 Courtenay River	79-07
A.1.7 Cowichan Lake	84-06
A.1.8 Cowichan & Koksilah Rivers at Duncan	81-05
A.1.9 Eagle River	79-01
A.1.10 Elk River at Fernie	79-05
A.1.11 Elk River at Sparwood	80-03
A.1.12 Kitimat River	82-03
A.1.13 Kootenay River: Kootenay Lake-U.S. Border	81-08
A.1.14 North Thompson River: Kamloops-Vavenby	82-12
A.1.15 Salmon & White Rivers	80-12
A.1.16 Shuswap River: Mara Lake to Mabel Lake	80-06
A.1.17 Skeena River: Lakelse-Terrace-Usk	82-10
A.1.18 South Thompson River: Kamloops-Chase	76-06
A.1.19 Thompson River: Kamloops Area	76-06
A.1.20 Tulameen River: Coalmont-Tulameen	81-04
A.1.21 Okanagan Lake: Westbank to Peachland	82-09
A.1.22 Columbia River at Revelstoke	83-11
A.1.23 Fraser and Nechako Rivers: Prince George	83-09
A.1.24 Kaslo River at Kaslo	84-03
A.1.25 Squamish River	83-10
A.1.26 Goat River	84-09
A.1.27 Mission Creek	84-09
A.1.28 Nanaimo River	84-05
A.1.29 Nechako River at Vanderhoof	84-07
A.1.30 Bulkley and Telkwa Rivers	84-12
A.1.31 Bulkley River at Houston	85-10
A.1.32 Cheakamus River	86-01
A.1.33 Zymoetz (Copper) River	85-06
A.1.34 Englishman River	85-04
A.1.35 Vedder River (Vedder Canal to Vedder Crossing)	85-12
DESIGNATED AREA (September 30, 1988) (From Schedule A.2 of the Agreement)	**ISSUE DATE**
A.2.1 Fraser and Quesnel Rivers at Quesnel*	87-05
A.2.5 Shawnigan Lake*	79-09
A.2.7 Coquihalla River at Hope*	85-06
A.2.8 Oyster River*	84-05
A.2.10 Salmon River near Prince George*	86-01
A.2.11 Peace River*	85-12
A.2.12 Fraser River near Hope*	87-07
A.2.13 Crawford Creek	87-06
A.2.15 Bulkley River Quick Area*	86-11

(*Interim Designation)

APPENDIX 3
SCHEDULE A.2

Area to be Remapped	Activity				
	Mapping				
	Air Photo	Field Control	Base Mapping	River Surveys	Engineering Studies
A.2.2 Fitzsimmons Creek (Whistler area)	(See Appendix 4 - A.3.50)				
A.2.3 Kettle and Granby (Grand Forks)	1988/89	1988/89	(1989/90)	-	-
A.2.4 Nicola and Coldwater (Merritt)	(See Appendix 4 - A.3.3)				
A.2.6 Similkameen River (U.S. Border-Princeton)	1988/89	1988/89	-	-	-
A.2.9 Alouette River	C	C	1988/89	C	(1989/90)
A.2.14 Bella Coola	(See Appendix 4 - A.3.1)				
A.2.16 Lillooet River	C	C	C	C	1988/89

C = Completed prior to the Agreement

APPENDIX 4
(PAGE 1 OF 2)
SCHEDULE A.3

AREA	ACTIVITY				
	MAPPING			RIVER SURVEYS	ENGINEERING STUDIES
	AIR PHOTO	FIELD CONTROL	BASE MAPPING		
1. Bella Coola River	C	C	C	C	1988/89
2. Beaver Creek near Fruitvale	C	C	C	C	1988/89
3. Nicola River	C	C	C	C	1988/89
4. Coldstream Creek near Vernon	-	-	-	-	-
5. Slocan River	C	C	C	C	1988/89
6. Elk River (ext. of existing mapping)	C	C	C	C	1988/89
7. Stuart River	C	C	C	(1989/90)	-
8. Salmon River near Westwold	C	C	C	C	-
9. Okanagan River	C	C	C	C	-
10. Campbell and Quinsam Rivers - Van. Island	C	C	C	C	1988/89
11. Keogh and Quatse Rivers - Van. Island	C	C	C	1988/89	-
12. Cowichan River (ext. of existing mapping)	(1989/90)	(1989/90)	-	-	-
13. Nechako River (ext. of existing mapping)	C	C	C	-	-
14. Kelowna Creek	-	-	-	-	-
15. Fortune and Deep Creeks near Vernon	-	-	-	-	-
16. Chilliwack River (ext. of existing mapping)	-	-	-	-	-
17. Duhamel Creek	C	C	1988/89	-	-
18. Shuttleworth Creek near Penticton	-	-	-	-	-
19. Silverton Creek - Slocan Lake	C	C	1988/89	-	-
20. Carpenter Creek - Slocan Lake	-	-	-	-	-
21. Zeballos River - Van. Island	C	C	1988/89	(1989/90)	-
22. Bridge Creek	-	-	-	-	-
23. Nakusp Creek	-	-	-	-	-
24. Bessette Creek	-	-	-	-	-
25. Cold River - Van. Island	-	-	-	-	-
26. Chilanko River - Cariboo	-	-	-	-	-
27. Dawson Creek	-	-	-	-	-
28. Skeena River - Usk to Hazelton	C	C	C	-	-
29. Lakelse Lake near Kitimat	C	C	C	1988/89	(1989/90)
30. Thompson River at Ashcroft	-	-	-	-	-
31. Bonaparte River at Cache Creek	-	-	-	-	-
32. Centurion Creek at Chetwynd	-	-	-	-	-
33. Clinton Creek at Clinton	-	-	-	-	-
34. Harrison Lake	-	-	-	-	-
35. Fraser River at Lillooet	-	-	-	-	-
36. Fraser River at Lytton	-	-	-	-	-
37. Fraser River at McBride	-	-	-	-	-
38. Kettle River at Midway	-	-	-	-	-
39. Salmo River	C	1988/89	(1989/90)	1988/89	-
40. Tahsis River - Van. Island	C	C	1988/89	(1989/90)	-
41. Swift Creek at Valemont	-	-	-	-	-
42. Boundary Bay at Greenwood	-	-	-	-	-
43. Nicomekl River at Langley	-	-	-	-	-

C = Completed Prior to the Agreement

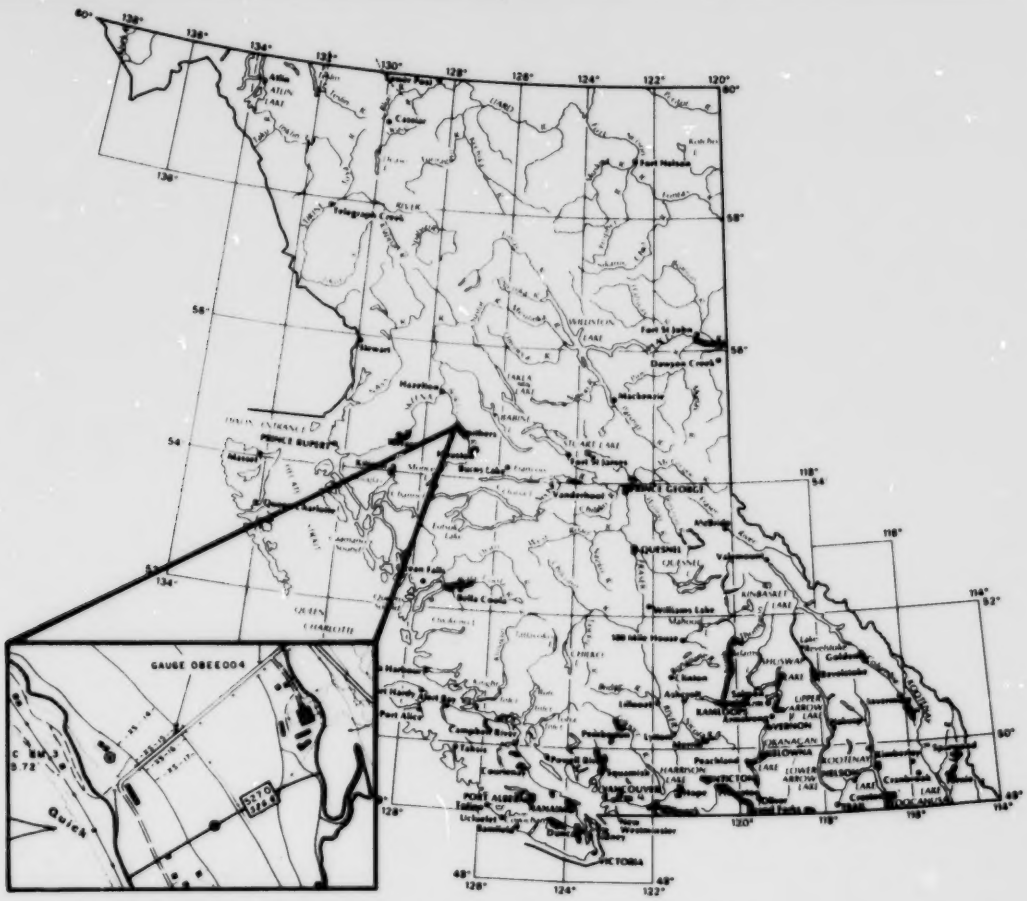
APPENDIX 4
(PAGE 2 OF 2)
SCHEDULE A.3

AREA	ACTIVITY				
	MAPPING			RIVER SURVEYS	ENGINEERING STUDIES
	AIR PHOTO	FIELD CONTROL	BASE MAPPING		
44. Mark Creek at Kimberley	C	C	C	-	-
45. Lynn Creek, Capilano River, Seymour River	-	-	-	-	-
46. Bear River at Stewart	(1989/90)	(1989/90)	-	-	-
47. Serpentine-Nicomekl Rivers	1988/89	1988/89	(1989/90)	-	-
48. San Jose River at Williams Lake	C	C	C	C	(1989/90)
49. Seymour River at Seymour Arm	C	C	C	C	(1989/90)
50. Whistler Area	C	C	C	1988/89	(1989/90)
51. Tsolum River - Van. Island	C	C	1988/89	1988/89	(1989/90)
52. Vernon Creek	-	-	-	-	-
53. Okanagan Lake (ext. of existing mapping)	-	-	-	-	-
54. Chemainus River	C	C	C	C	(1989/90)
55. Sooke River	C	C	C	-	-
56. Little Qualicum River	-	-	-	-	-
57. French Creek	-	-	-	-	-
58. Somass River	-	-	-	-	-
59. Kanaka, Wilson and Chapman Creeks	C	C	C	-	-
60. Hatzic Lake	C	C	C	C	-
61. Stawamus River	C	C	C	C	-
62. Christina Lake	C	C	C	N/A	-
63. Shuswap River (Mara to Sugar Lake)	-	-	-	-	-
64. Heffley Creek	-	-	-	-	-
65. Barriere River	-	-	-	-	-
66. North Thompson River (ext. to Vavenby)	-	-	-	C	-
67. Chilako River (near Prince George)	-	-	-	-	-
68. Kitsumkalum River (near Terrace)	-	-	-	-	-
69. Naver Creek (near Hixon)	(1989/90)	(1989/90)	-	-	-
70. Silverdale Creek	-	-	-	-	-
71. Fraser River	-	-	-	-	-
72. Nechako River	C	-	-	-	-
73. Endako River	-	-	-	-	-
74. Willow River	-	-	-	-	-
75. Crooked River	-	-	-	-	-
76. Bulkley River (Quick to Houston)	-	-	-	-	-
77. Pine River	-	-	-	-	-
78. Muskwa and Prophet Rivers	-	-	-	-	-
79. McLennan River	-	-	-	-	-
80. Halfway River	-	-	-	-	-
81. Columbia River (U.S. border to Trail)	C	-	-	-	-
82. Kootenay River (Columbia R. to Kootenay L)	-	-	-	-	-
83. Kootenay River (Canal Flats to Ft. Steele)	-	-	-	(1989/90)	-
84. Duncan and Lardeau Rivers	1988/89	1988/89	-	-	-
85. Columbia River (Donald Station to Radium)	-	-	-	-	-
86. Fraser River (Tidewater to Hope)	-	-	-	-	-

C = Completed prior to the Agreement

APPENDIX 5

Floodplain Mapping Locations



Floodplain Maps show the location of floodplain boundaries and indicate calculated flood elevations. These maps provide general information used to assist in administrative decisions regarding future development in flood hazard areas. They also indicate roads, railways, power lines, existing buildings, place names, watercourses and contour information.

There are approximately 330 floodplain mapping sheets available focusing on the major watercourses in the Province. The majority of these sheets are at a scale of 1:5 000 with 1 metre contour information.

Detailed key plans showing the exact location and scale of each sheet should be obtained by indicating the geographical references and writing to Maps B.C.